



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,070	11/16/2001	Rotem Cooper	010100	3852

23696 7590 06/22/2004

Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
San Diego, CA 92121-1714

EXAMINER

LE, DANH C

ART UNIT	PAPER NUMBER
----------	--------------

2683

DATE MAILED: 06/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/991,070

Applicant(s)

COOPER, ROTEM

Examiner

DANH C LE

Art Unit

2683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-15 and 18-32 is/are rejected.
- 7) ☒ Claim(s) 5-7, 16 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-4, 8-15, 20, 22, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raith (US 6,018,661) in view of English (US 5,870,674).**

As to claim 1, Raith teaches in a mobile station adapted for slotted operation on a current wireless communications system (figure 6 and col.11, lines 53-64 and col.13, lines 19-36), a method for acquiring a wireless communications system comprising the steps of:

during a slot-off period, analyzing a signal received on a channel associated with a candidate base station,

determining, based on the analysis of the received signal, whether the candidate base station is likely to be available for acquisition by the mobile station, and

attempting to acquire the candidate base station if it is determined that the candidate base station is likely to be available for acquisition.

Raith fails to teach the candidate base station is a communication system. English teaches the candidate base station is a communication system (figure 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to provide the teaching of English into the system of Raith in order to acquire the most desirable system for the region.

As to claim 2, the combination of Raith and English teaches the method of Claim 1 further comprising the step of selecting a set of candidate communications systems, wherein the step of analyzing is repeated for each candidate communications system in the set (English, figure 2).

As to claim 3, the combination of Raith and English teaches the method of Claim 2 wherein, for each candidate communications system in the set, the step of analyzing comprises (English, figure 2) the steps of:

switching to a channel associated with the candidate communications system,
and
testing the received signal.

As to claim 4, the combination of Raith and English teaches the method of Claim 3 wherein, for each candidate communications system in the set, the steps of switching and testing are completed during a single slot-off period (English, figure 2).

As to claim 8, the combination of Raith and English teaches the method of Claim 2 wherein each candidate communications system is more desirable than the current communications system (col.6, line 19-col.7, line 25).

As to claim 9, the combination of Raith and English teaches the method of Claim 2 wherein the mobile station includes a table of known communications systems, each known communications system having a relative desirability, and wherein the set of candidate communications systems is selected from the table of known communications

systems, and wherein each candidate communications system in the set has a relative desirability that is greater than the current communications system.

As to claim 10, the combination of Raith and English teaches the method of Claim 9 wherein a geographic region for each communications system is stored in the table of known communications systems and wherein the set of candidate communications systems includes only known communications systems in the same geographic region as the current communications system (English, col.2, lines 8-24).

As to claim 11, Raith teaches the method of Claim 2 wherein the set of candidate communications systems includes at least one digital communications system and at least one analog communications system (Raith, col.1, lines 7-44).

As to claim 12, Raith teaches the method of Claim 1 wherein the step of analyzing comprises the step of measuring the strength of the received signal (col.11, lines 14-21).

As to claim 13, Raith teaches the method of Claim 12 wherein the candidate communications system is expected to be available if the measured strength of the received signal exceeds a predetermined threshold value (col.12, lines 21-63).

As to claim 14, Raith teaches the method of Claim 13 further comprising the step of selecting a set of candidate communications systems, wherein the steps of analyzing and determining are repeated for each candidate communications system in the set (col.10, lines 10-28).

As to claim 15, Raith teaches the method of Claim 14 wherein the step of attempting to acquire is performed for each candidate communications system that has

a corresponding measured signal strength that exceeds the predetermined threshold value, until a candidate communications system is acquired or the candidate communications systems are exhausted (col.12, line 63-col.13, line 36).

As to claim 20, Raith teaches the method of Claim 1 wherein the step of analyzing comprises the step of attempting to decode the received signal (col.1, lines 7-17).

As to claim 22, the claim is an apparatus of claim 1; therefore, the claim is interpreted and rejected as set forth as claim 1.

As to claim 23, the claim is an apparatus of claim 9; therefore, the claim is interpreted and rejected as set forth as claim 9.

3. Claims 18, 19, 24-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raith (US 6,018,661) in view of English (US 5,870,674) and Moon (US 6,577,608).

As to claim 18, the combination of Raith and English teaches the method of Claim 1. The combination of Raith and English fails to teach the step of analyzing comprises the step of calculating a ratio E_c/I_o of the received signal. Ww teaches the step of analyzing comprises the step of calculating a ratio E_c/I_o of the received signal (col.15, line 57-col.16, line 34). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of English and Moon into the system of Raith in order to choose the most desirable system.

As to claim 19, the combination of Raith , English and Moon teaches the method of Claim 18 wherein the candidate communications system is expected to be available if the calculated ratio E_c/I_o exceeds a predetermined threshold value (col.15, line 57- col.16, line 34).

As to claim 24, the combination of Raith and English teaches the mobile station of Claim 23 wherein the processing circuitry to analyze a signal received during the slot-off period and determine, based on the analysis, whether the candidate communications system is likely to be available for acquisition by the mobile station. The combination of Raith and English fails to teach further include a searcher logic. Moon teaches processing circuitry include a searcher logic (figure 10, 110, figure 11). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Moon into the system of Raith and English in order to identify the valid signals.

As to claim 25, the combination of Raith , English and Moon teaches the mobile station of Claim 24 wherein the processing circuitry initiates an attempt to acquire the candidate communications system if it is determined that the candidate communications system is likely to be available for acquisition (English, col.13, lines 19-36).

As to claim 26, Raith teaches in a wireless device, an integrated circuit (col.11, lines 53-64) comprising:

a control processor including logic for controlling a slotted operation mode of the wireless device, the slotted operation mode including:

a slot period during which the control processor instructs the wireless device to listen for incoming messages from a current wireless communications system, and

a slot-off period during which the control processor instructs the wireless device to enter a sleep mode;

Raith fails to teach a system determination unit coupled to the control processor, the system determination adapted to identify candidate communications systems in a current geographic region of the wireless device that are more desirable than the current wireless communications system, and a searcher coupled to the control processor and system determination unit, the searcher adapted to analyze a signal quality of at least one of the identified more desirable communications systems, wherein the measurement of each more desirable communications system is performed during a single slot-off period. English teaches a system determination unit coupled to the control processor, the system determination adapted to identify candidate communications systems in a current geographic region of the wireless device that are more desirable than the current wireless communications system (figure 1, 8). Moon teaches the searcher adapted to analyze a signal quality of at least one of the identified more desirable communications systems, wherein the measurement of each more desirable communications system is performed during a single slot-off period (figure 11). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of English and Moon into the system of Raith in order to choose the most desirable system.

As to claim 27, the combination of Raith, English and Moon teaches the integrated circuit of Claim 26, wherein the searcher measures the strength of received signal for each identified more desirable wireless communications system (Moon, col.15, line 57-col.16, line 34).

As to claim 28, the combination of Raith, English and Moon teaches the integrated circuit of Claim 26, wherein the searcher calculates the ratio E_c/I_o of a received signal for each identified more desirable wireless communications system (Moon, col.15, line 57-col.16, line 34).

As to claim 29, the combination of Raith, English and Moon teaches the integrated circuit of Claim 26 further comprising a memory coupled to the system determination unit, the memory storing a list of known communications systems, each known communications system having an associated geographic region and relative desirability, wherein the systems analyzed by the searcher are selected from the system table (English, figure 1).

As to claim 30, the combination of Raith, English and Moon teaches the he integrated circuit of Claim 29 wherein the searcher is adapted to analyze the signal quality of each identified candidate communications system and notify the system determination unit of the results (Moon, col.15, line 57-col.16, line 34).

As to claim 31, the combination of Raith, English and Moon teaches the integrated circuit of Claim 26 wherein the system determination unit is adapted to transmit an instruction to the searcher, the instruction including a test identifier; and

wherein, in response to a received instruction, the searcher analyzes the signal quality of at least one of the identified more desirable communications systems using a test method identified by the test identifier (English, col.2, line 65-col.3, line 13).

As to claim 32, the combination of Raith, English and Moon teaches the he integrated circuit of Claim 31 wherein the transmitted instruction further includes a threshold value, and wherein the searcher transmits a notification message to the system determination unit when the analyzed signal quality exceeds the threshold value (Raith, col.12, lines 31-50).

4. Claims 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Raith (US 6,018,661) in view of English (US 5,870,674) and Elzein (US 6,259,917).

As to claim 21, the combination of Raith and English the method of Claim 1 wherein the step of analyzing comprises the step of locating a SID in the received signal, and wherein the step of determining comprises the step of verifying that the located SID match a SID of the candidate communications system (English, col.4, lines 2-20). The combination of Raith and English fails to teach further NID in the received signal. Elzein teaches further NID in the received signal (col.1, lines 29-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Elzein into the system of Raith and English in order to select the most desirable network identifier.

Allowable Subject Matter

5. Claims 5-7 and 16-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claims 5, the teaching of above prior arts either alone or in combination fails to teach if the time remaining in the current slot-off period is insufficient to complete the steps of switching and testing for the current candidate communications system, the mobile station returns to the current communications system until a subsequent slot-off period, and wherein the step of analyzing is resumed during a subsequent slot-off period.

As to claims 16, the teaching of above prior arts either alone or in combination fails to teach the step of determining comprises the step of sorting the candidate communications systems in order of measured strength, the sorted order defining the order of attempted acquisition.

Dependent claims 6, 7 and 17 are allowable for the same reason.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A. Barber et al (US 6,016,427) teaches the preferred carrier selection method.

B. Barber et al (US 6,405,038) teaches the cellular carrier selection system incorporating a preferred list of system identification codes (SIDS) corresponding to preferred cellular carriers.


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANH C LE whose telephone number is 703-306-0542. The examiner can normally be reached on 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, WILLIAM TROST can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Danh C.Le



WILLIAM TROST
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600